

# **King County Public Health Operational Master Plan**

Background Paper

**Health Environment**

April 25th, 2006

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*Please note: This background paper should be viewed as a dynamic product. It is likely that new information will continue to be provided during the life of this project. The reader should regard this paper together with the companion papers on role definition, policy environment and funding as initial guidance for the production of a broad policy framework.*

## **Executive Summary and Implications for Next Steps**

In this executive summary we provide our interpretation of the significance and meaning of the observations in this paper as they relate to a broad policy framework for public health in King County. First, the key observations:

- **The current health environment is tremendously precarious.** There is a remarkable concurrence of health related forces globally, nationally and locally. Four aspects of the local health environment contribute to a sense of crisis: persistent health inequities, growth of chronic diseases, re-emergence of old and new infectious disease threats and an extremely fragile safety net of care for vulnerable populations.
- **Global, national, state and local forces are playing out within King County's health environment, including:**
  - globalization
  - accelerating technological advances
  - huge demographic changes
  - widening gaps between haves and have-nots
  - re-emergence of the importance of infectious diseases, epidemics and pandemics
  - increasing prevalence of chronic diseases
  - complex and persistent health disparities
  - profound impact of social, built, and physical environment
- **A factor unique to the United States among modern industrialized counties is the absence of universal access to basic medical care.** This fact stresses King County, its residents and the safety net providers serving the uninsured.
- **The OMP is an opportunity for King County and PHSKC to build on past success and face new challenges as national leaders in major metropolitan public health.**

Important implications for next steps based on this description of the health environment include:

- **Rapid change demands innovation and flexibility.** Ongoing support for public health is needed to establish and maintain the basic infrastructure as a foundation upon which innovation can flourish. Public health must have the capability to be flexible and nimble to respond to new and emerging problems. Innovation will be enhanced by progressive partnerships with universities, cutting-edge research institutions and communities.
- **State of the art technology should be a major tool for improvement.** Health related technologies (i.e. new HIV treatments, genomic-based screening and diagnostic tests, vaccines, etc,) and those which depend on advances in informatics and communications will need serious attention and investment in order to keep pace with the modern world. These investments should be based on evidence of best practice models.
- **Health disparities must be eliminated, BUT there is no “magic” solution.** Serious and persistent inequities in health status across race/ethnicity, gender, income groups, and geography are a reflection of broader inequities in the distribution of social resources. Unless underlying determinants of health are addressed, the health environment will continue to be defined by these patterns of inequity.

It is certain that substantial advances in the elimination of disparities will require a completely fresh look. Because health disparities are now entrenched, no single action can reverse the problem. Organizations and leaders should avoid the temptation to address the issue with short-term and superficial efforts. Any serious effort to address health inequities will necessarily require a multi-faceted, multi-sector, long-term commitment.

- **Recent past accomplishments should not be taken for granted.** Overall, King County can be proud of the general health of its residents. To maintain the gains of the past is critically important while improvements are made and the challenges described in this report are addressed. Care should be taken to avoid dismantling successful programs and services in the pursuit of new issues.

Experience has shown that the value of prevention and early intervention is sometimes, unfortunately, shown only after a program is stopped or weakened. Prevention techniques do not have the visibility they deserve when compared to new technologies. Yet it is important to balance promising technology advancements with the need for lower tech public

health interventions such as outreach, social support and community building. These interventions are often less costly and more effective because they involve and empower people to act within their communities.

- **New and old infectious disease threats have emerged or re-emerged.** Naturally occurring epidemics and threatened bioterrorism demand a renewed vigilance. Given that public health infrastructure has been largely under-funded for decades, significant events such as natural disasters or acts of terrorism pose a substantial threat to local public health agencies and the communities they serve.
- **The environment must be leveraged for human health.** Focus on the environment should emphasize all aspects of the environment and encompass the human health implications of the social, physical and built environment. Procedures for defining and making major policy decisions (even if the decisions are perceived initially to be unrelated directly to health) should incorporate proactive precautionary measures to avoid potential health risks and formal health impact assessments which refine policy proposals so that they foster health.
- **Capitalize on the synergy between personal healthcare and population health services.** Policies which promote inclusion of a population health perspective in health care delivery systems can reconnect the personal health care system and population health. Both systems need to address the disparities in quality of health care by race, culture and income and contribute to the elimination of inequities in health status. Local coordination with and expansion of safety net providers should build on models which have worked in the past within King County and explore new ways of using current resources most efficiently while advocating collectively for new resources. The interaction and close coordination between the personal and population health arena is a sleeping giant for prevention within King County.
- **Advocacy for universal access to healthcare needs reinvigoration** There is a tipping point at which widespread deficiencies in personal health care become themselves major public health problems. Many believe that we are already past that tipping point. Adequate population health cannot be achieved without making comprehensive and affordable health care available to every person residing in the United States. Key roles of public health in this collaborative effort are providing support, information and coordination with the health care providers in the community.

- **The public health workforce of the future will require new and varied skills.**  
There is no more important element of the public health infrastructure than the expertise and skills of the workforce.

## Introduction

### **Purpose of this paper**

In this paper we provide a high level overview of the health environment in which public health policy is formulated in King County. The paper is meant to complement three other related papers dealing with the role of public health, funding for public health and the policy environment. The focus of this paper is on health status, the determinants of health, selected aspects of health care and threats to health.

We focus on trends which provide future forecasts of health-related issues germane to policy. Policy is developed by asking the questions which set the agenda for the future. Thus, it is important to establish the context not only by understanding the current health environment, but also by anticipating trends in influential forces of change. These trends of influential forces include:

- globalization
- accelerating technological advances
- huge demographic changes
- widening gaps between haves and have-nots
- re-emergence of the importance of infectious diseases, epidemics and pandemics
- increasing prevalence of chronic diseases
- complex and persistent health disparities
- profound impact of social, built, and physical environment

Stepping back above the fray of current programs and priorities to observe trends in health and health drivers is an objective of this paper. This paper is not intended to produce a treatise on public health practice and the health environment, but rather to provide insight into what might help guide a broad framework for policy. Statistical analyses will be sparse and certainly not comprehensive. Quantitative data will be displayed only to illustrate general points, avoiding the tendency of abstract numbers to obscure the punch of the message about critical aspects of the health environment.

## **Key concepts**

**Health** is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. (*World Health Organization*).

- How a community defines health greatly influences its approach to preserving and protecting health and the distribution of health-related investments to achieve good health outcomes for all segments of the population.

**Social Determinants of Health** are the economic and social factors that influence the health of individuals, communities, and jurisdictions as a whole. (*Source: Dennis Raphael, "Introduction to the Social Determinants of Health," Social Determinants of Health: Canadian Perspectives. Also see Appendix I for another model of broad determinants of health*)

- These factors determine whether individuals stay healthy or become ill (a narrow definition of health).
- These factors also determine the extent to which a person possesses the physical, social, and personal resources to identify and achieve personal aspirations, satisfy needs, and cope with the environment (a broader definition of health).
- These factors are directly impacted by the quantity and quality of a variety of resources that a community makes available to its members. These resources include – but are not limited to – conditions of childhood, income, availability of food, housing, employment and working conditions, and health and social services.
- A focus on the social determinants of health asserts that the mainsprings of health are how a community organizes and distributes economic and social resources. Such a focus emphasizes community conditions in contrast to the traditional focus upon biomedical and behavioral risk factors, such as cholesterol, body weight, physical activity, diet, and tobacco use. It directs attention to the important role economic and social policies have on health. *For example, policies that prevent suburban sprawl and dependence on the automobile will increase physical activity and decrease obesity.*

**Healthcare** is the preservation and restoration of mental and physical health by preventing or treating illness through the provision of services offered by health-related professionals to **individuals**.

- This working definition above is used in this paper since there is no standard definition of healthcare. One important element of healthcare is the medical service provided by physicians and other health professionals, but healthcare is broader than medical care.
- Healthcare is a personal health service which has the objective of enhancing, restoring, or maintaining an individual's health. Healthcare is the type of service where it is easy to identify by name the individual who benefits from the service.
- Healthcare has also been described as an industry associated with the provision of medical and ancillary care to individuals. As such, it is one of the world's largest and fastest-growing industries.

**Personal healthcare** encompasses the services provided to individual patients by health care providers for the direct benefit of the individual patient. For the purposes of this paper, there are several ways personal healthcare is delivered:

- **Primary Care** is clinical preventive services, first-contact treatment services, and ongoing care for commonly encountered medical conditions. Primary care is considered comprehensive when the primary provider takes responsibility for the overall coordination of the care of the patient's health problems, whether these are medical, behavioral, or social. The appropriate use of consultants and community resources is an important part of effective primary care. Such care is generally provided by physicians, but can also be provided by other personnel, such as nurse practitioners or physician assistants. (*adapted from Public Health What It Is and How It Works, Bernard J. Turnock*) For example, the diagnosis and treatment of a sore throat or the management of high blood pressure are most often provided in a primary care setting.
- **Categorical clinical services** are personal healthcare services provided to individual clients/patients by any of a variety of health professionals, including physicians, nurses, dentists and others, to address specific health issues. Categorical clinical services may include treatment of illness or injury or prevention of health problems and can be delivered as elements of comprehensive primary care or as stand-alone services. Examples include providing family planning services or treatment for a sexually transmitted disease in clinics designed for these specific health problems.
- **Specialized and referral services** are personal health services such as:
  - laboratory, x-ray and pharmaceutical services

- medical services for emergencies during transport (EMS)
- emergency room care for “ true” emergencies
- specialty care of complex illnesses including mental health services
- hospital services
- long-term care services

**Wrap around services** are non-clinical services provided to individuals (usually by professionals other than physicians, nurses, dentists) in support of health and wellness. These services may be based in the community and need not be provided in a primary care or clinical setting although they may be. Examples include case management by social workers, nutritional counseling and health education.

**Population-based health services** are interventions aimed at disease prevention and health promotion that affect an entire population and extend beyond medical treatment by targeting underlying risks, such as tobacco, drug, and alcohol use; diet and sedentary lifestyles; and environmental factors (*adapted from Public Health What It Is and How It Works, Bernard J. Turnock*)

- Population-based health services have the objective of enhancing, maintaining and protecting the health of **populations**. Typically it is not possible to identify by name the individuals who benefit from population health services. Examples include food safety programs, regulation of indoor air quality and environmental tobacco smoke, pandemic influenza preparedness, health impact analysis of policy initiatives, community based health promotion, etc.

**Public Health** is what we as a society do collectively to assure the conditions in which people can be healthy. (*Institute of Medicine*)

- Unlike healthcare, public health is concerned primarily with prevention, protecting health and promoting healthy conditions at the level of a population.

**Risk factor** is a behavior or condition that, on the basis of scientific evidence or theory, is thought to influence susceptibility to a specific health problem. (*from Public Health What It Is and How It Works, Bernard J. Turnock*) Examples of personal risk factors include stress, tobacco use, elevated cholesterol and risky sexual behavior; examples of population risk factors include poverty, homelessness, institutionalized racism, exposure to environmental toxins and unsafe food.

**Health disparity (sometimes also called health inequities)** is a difference in a health outcome or determinant of health across two populations, such that one population suffers a disproportionate burden of illness.

## Overview

### Dramatic changes

Our nation and all communities on the globe have experienced an astonishing change in the context and challenges of the health environment. The professional literature which examines the magnitude and rapid rate of changes in the national and international health environments over the past decade is vast and complex. At the same time, the popular lay press has intermittently reported many of these changes in dramatic personalized accounts; the general public may have become numbed into denial and inaction. Policy should be informed by a broad understanding of how profound these changes really have been.

In order to succinctly summarize these trends in a manner useful for policy formulation, this paper relies primarily on several key sources:

- *The Future of the Public's Health in the 21<sup>st</sup> Century*, a 2003 publication of the authoritative Institute of Medicine (IOM) describes the future opportunities for improvement in the health of the public and the contributions which Public Health can make. The Institute of Medicine acts under the responsibility given to the National Academy of Sciences by its congressional charter to be an advisor to the federal government and upon its own initiative to identify issues of medical care, research and education. It secures the services of eminent members of the appropriate professions in examination of policy matters pertaining to the health of the public.
- A more informal source relies on the reflections of Dr. William Foege of the University of Washington and the Bill and Melinda Gates Foundation. Dr. Foege is a renowned international thought leader about global public health.
- For the remainder of the report we rely heavily on the *Health of King County* report and also on the *Big Cities Health Inventory, 2003*. The *Big Cities Health Inventory, 2003: The Health of Urban USA* is the fourth edition of the Chicago Department of Public Health document published in collaboration with the National Association of County and City Health

Officials and presents city-to-city comparisons of leading measures of health.

- The emphasis in this report is to extract and display observations that are particularly informative to the development of a broad policy framework. This paper is designed to be used in the first phase of the King County Public Health Operational Master Plan (PHOMP). The first phase focuses on the development of a broad policy framework to be used to make future decisions about funding and implementation.

### **International Overview**

We start with a paraphrase of the wisdom of Dr. Foege extracted from his recent speeches. He points to overarching themes which inform our understanding of the health of the world, the impact of natural and human systems on health, and the forces shaping the international health scene. All have grown in prominence over the past decade and will remain potent forces into the foreseeable future:

- **An increasing consciousness of the whole by ever larger segments of society:** Communications have improved so that more people are aware of what is happening but also feel some obligation to respond. So the first requisite for improving the state of the world, namely “eye contact” between the problems and the people who can make a difference, is increasingly possible. People actually are beginning to understand that we are part of a global system.
- **Unequal and diverging paths.** The benefits of science, wealth, knowledge, the marketplace, and government increasingly benefit those who are already more fortunate than others. The accident of birth determines whether you are on the wide, relatively healthy, relatively affluent, relatively barrier-free highway, or whether you are on the barely passable poor and sick rock-strewn footpath. Foege peppers his speeches with thought-provoking quotes about poverty. Samples include:
  - Willem de Kooning, 20<sup>th</sup> century abstract expressionist painter: “The trouble with being poor, it takes all your time.”
  - W.E.B. Du Bois, early 20<sup>th</sup> century black intellectual leader: “To be a poor man is hard, but to be a poor race in a land of dollars is the very bottom of hardships”
  - Aristotle, ancient Greek philosopher: “Poverty is the parent of revolution and crime.”

- Mohammed Yunus, founder of the micro-lending Grameen Bank, “We believe that poverty does not belong to a civilized human society. It belongs to museums.”
- **The age of science and technology.** Technological advances have dramatically increased our ability to understand the world, and to measure and respond to health problems. We stand at the very edge of practical solutions, including vaccines for malaria, tuberculosis, cancer of the cervix, and even HIV/AIDS. Within a decade, any one of us may be able to have our entire genome mapped out.
- **Convergence of natural and self-inflicted problems.** Infectious diseases and malnutrition which have continued to be dominant global health factors are now joined by health threats from alcohol, drugs, fatalism, depression, and violence. The combined convergence of old and new threats describe the conditions of many inner cities in the U.S. as well as conditions of poor countries.
- **Infectious diseases.** During recent decades the scales *had been* tipping slowly away from the dangers of the natural world such as infectious diseases. *That is no longer the case.* Now, and quite suddenly, there has been a reversal in the trend. With the re-emergence of infectious diseases, we now worry about AIDS, tuberculosis, pandemic influenza, emerging problems from Ebola to SARS to Hantavirus and even to the previously unthinkable prospect of the deliberate release by humans of smallpox virus.
  - **Antibiotic resistance.** Once created, new antibiotics are widely advertised and market forces push them to the greatest use possible, which leads to misuse. In addition to inappropriate use, antibiotic resistance occurs when patients find it difficult to comply with recommended treatment regimens. So the combination of poor compliance, population pressures leading to tuberculosis spread and the marketplace pressure to misuse of antibiotics results in the emergence of drug-resistance diseases such as resistant tuberculosis. And this fact applies to many other infectious diseases.
- **Violence.** Violence (whether intentional or unintentional) has increased and now accounts for three of the top five reasons for premature mortality in the United States. Violence takes many forms, from automobiles and occupational injuries, suicide and homicide, to war and terrorism.
- **Environment.** Our health continues to be impacted by global warming, rainforest destruction, acid rain, pollution and natural disasters (droughts, earthquakes, tsunamis, hurricanes).

## **National overview**

The 2003 IOM report amplifies the afore-mentioned international factors and describes additional specific national issues related to changes in the health environment within which public health must operate in the United States. The report cites the following:

- **Globalization** is the process of increasing economic, political, and social interdependence and global integration that takes place as capital, traded goods, persons, concepts, images, and values diffuse across national boundaries. Some of the many implications related to public health include:
  - The diversity of many American communities is illustrative of what has been occurring on a global scale.
  - Increased trade, travel, migration, demographics, food security, media communications, technology and patterns of consumption create new challenges for public health.
  - Direct health challenges include infectious diseases, ozone depletion, global environmental degradation, and lifestyle patterns that transcend national borders.
  - Socioeconomic determinants of health such as income and employment are profoundly influenced by globalization.
  - Information and communication technologies such as the worldwide web accelerate the rate of change.
  - As people, food and pharmaceuticals readily cross borders, improved surveillance systems for public health risks and implementation of cross-border agreements become even more essential.
  - Although the health of the public has historically been overshadowed by trade and military issues, in recent years health has gained prominence as a national security concern.
- **Scientific and technological advances:** In this age of technology, the acquisition of new scientific knowledge and capabilities occurs at unprecedented speed. There are many observations related to this development:
  - Advances in understanding the human genome will likely lead to the emergence of “designer drugs” tailored to individual genetic composition for prevention and treatment and, at the same time,

raise controversial issues of balancing the positive value of early detection through screening against the risks of stigmatization and exclusion.

- The lack of access to care will limit the diffusion of rapidly advancing medical technologies to all segments of our populations. Technologies may create great opportunities to improve individuals' health. However, because they are often inaccessible to those without health insurance, they actually may contribute to increased health disparities.
- Information technologies will likely be as influential on population health strategies as are medical advances, because they are important sources of useful and accurate information and, unfortunately, of misinformation. We are in need of new tools for more sophisticated communication strategies, public health informatics and improved surveillance systems.
- **Population growth and demographics:** The U.S. population will become older and more diverse.
  - Services and social supports to promote healthy aging will be increasingly important as will the rising population needs for the prevention, care and management of chronic diseases and for community-based long-term care.
  - All people, but particularly the elderly, the poor, the disabled, children and minorities, will require adequate housing, safe and appropriate urban design, accessible transportation, access to healthy groceries and places for positive social interaction to achieve their healthy potential.
  - As the United States becomes more racially and ethnically diverse owing to immigration and natural growth, the proportion of the population accounted for by Hispanics, African Americans, Asian Americans and Pacific Islanders and Native Americans will rise from 28 per cent in 2000 to 32 percent by 2010.
  - Our health systems, including services for individuals (e.g. medical treatment) or for populations (e.g. public health promotion programs), are marked by complex inequities and institutionalized racism leading to stereotypes, biases, unequal and ineffective service delivery. Similar inequities and barriers for newly arrived populations such as refugees are exacerbated by perceptions within those populations about government, the meaning of community and the definition of health.

- **Healthcare:**

- While all other industrialized nations guarantee universal access to care, the US, in spite of health care expenditures which total nearly half of the world's health care budget (\$1.3 trillion) and about 15 % of its GDP, fails to ensure such access to its population.
- Personal healthcare is one of the determinants of health; others include genetic, behavioral, social and environmental factors. Even if it is not the strongest among these determinants of health, access to healthcare is very important. More than 41 million people in the U.S - more than 80 per cent of whom are members of working families - are uninsured. Being uninsured, although not the only barrier to obtaining health care, is by all indications the most significant one. Even when insured, however, limitations of coverage (benefits, cost-sharing, co-payments, etc.) and cultural barriers still impede people's access to care.
- Limited access resulting in poor health can push individuals and groups into poverty, further contributing to the vicious cycle of disadvantage. The downstream costs of lack of access are well documented (more hospitalizations, more ER use, poorer birth outcomes, more communicable disease, learning difficulties, lost productivity) – and this contributes significantly to today's health care disparities, the effects of which will continue to persist for generations.
- The Health Insurance Portability and Accountability Act of 1996 established national minimal standards for protected health information. Though well-intended, the implication of this act has been to create an undue burden on health care providers with little added benefit to patients.

- **Safety net providers:**

- As defined in the IOM report, safety net providers are those providers who organize and deliver a significant level of health care and other health-related services to uninsured, Medicaid and other vulnerable patients.
- Nationally, there is a crisis for safety net providers.
- The 2003 IOM report re-endorsed the conclusions of its earlier 2000 report entitled, *America's Health Care Safety Net: Intact but Endangered* which found the following:

- Despite today's robust economy, safety net providers – especially core safety net providers – are being buffeted by the cumulative and concurrent effects of major health policy and market changes.
- The future viability of the safety net is severely threatened because even the most resilient and resourceful safety net providers will be challenged to survive the current environment which includes
  - Growth in Medicaid managed care enrollment (which removes a source of payment for safety net providers)
  - Retrenchment or elimination of key direct and indirect subsidies which help finance uncompensated care
  - Continued growth in the number of uninsured people
- Combined, these forces and dynamics demand the immediate attention of public policy officials.
- The 2003 Report concludes that it is the responsibility of the federal government to lead a national effort to solve this problem.

- **Physical environment as a determinant of health**

- The importance of “place” to health status is increasingly clear, whether “place” is where we work, live, study or recreate.
- All aspects of the human environment (social, economic, natural and built) are critically important to health.
- In urban areas, the negative environmental factors – toxic buildings, proximity to industrial parks and lack of green space – disproportionately affect those who are already living with economic and social disadvantage.
- Aging and deteriorating buildings, crowded and unsanitary conditions, and poor indoor air quality commonly lead to exposure to lead and other environmental toxins and to asthma and other respiratory illnesses.
- The physical space in which people live makes a profound impact on the health of populations.
- Urban sprawl contributes negatively to health status through its effects on obesity and air quality.

## **State/Local Health Risk and Needs**

National and international forces come into sharp focus when we examine state and local public health reports. In the case of King County and the State of Washington, reports from each reach similar conclusions about health and, therefore, we concentrate on the most recently released PHSKC report for depicting the health environment in King County.

Public Health - Seattle & King County (PHSKC) provides a number of excellent, detailed and sophisticated reports. PHSKC has a well-earned national reputation for producing and contributing to scientifically sound and cutting-edge characterization of health status and social determinants of health. These reports include among others: the *Health of King County*; the *Communities Count* report; *Data Watch*; the *Core Indicators project*; and *Epilog* (a monthly epidemiological report). Importantly, these reports have been used as springboards for focused interventions executed within a complex health environment - interventions which address asthma, pandemic influenza, obesity, health disparities and the built environment.

Below is a brief summary of some of the more salient observations from these reports:

- Chronic diseases such as cancer, heart disease, stroke, chronic lung diseases (including asthma, emphysema and chronic bronchitis) and diabetes are the largest contributors to ill health in King County
- Risk factors for chronic diseases are common and affect a growing proportion of the population
- The prevalence of diabetes among adults has doubled in the past decade
- HIV has now become a chronic condition as HIV mortality has dropped precipitously
- The risk of an influenza pandemic and other emerging infections is increasing
- Access to health care has declined notably in the past five years, with a record proportion (15.5%) of the population age 18-64 lacking health insurance (190,000 people) and a reliable source of medical care. In spite of declines in the uninsured rate in King County from 1993 to 2001 (and in Washington State between 1991 and 2000), in 2004 King County experienced its highest rate of uninsured people since data were first recorded in 1991.
- The safety net in King County is threatened by the increasing expense of private health insurance coverage that causes people to drop coverage, the persistent overall growth of

medical costs (especially pharmaceuticals), the federal and state limits on payments for Medicaid, and the lack of funding for new community health centers and other safety net providers where needed. In contrast to other areas of the country, growth in Medicaid managed care enrollment by itself does not financially threaten the safety net providers within King County because the providers receive a fee for case management.

- Over the past ten years, the percentage of uninsured people in King County has generally mirrored, but remained slightly less, than that of Washington State
  - Medicare coverage is almost universal for people aged 65 and over.
  - Within King County, wide disparities in insurance coverage exist by level of education, income, age and race.
  - Lack of coverage for eyeglasses, dental health, mental health and prescription drugs is considerably more common than lack of medical coverage.
- The increasing diversity of the population requires that the public health and medical care systems address health issues in a growing number of cultural contexts

Several health status indicators are, however, showing improvement in King County as a whole:

- The overall death rate continues to fall.
- Mortality from the most common cancers (lung, colorectal, breast and prostate) is declining.
- Smoking rates have steadily declined.
- Motor vehicle injury deaths and hospitalizations are dropping and seat belt use is increasing.
- The epidemic of firearm deaths in Seattle during the early-mid 1990s has reversed.
- Infant mortality is at its lowest overall rate ever.
- Hepatitis A and B rates have declined dramatically.
- Outdoor air quality has steadily improved.
- Important risk factors for chronic diseases include smoking, obesity and physical inactivity, and these are associated with leading causes of death such as heart disease, cancer and stroke. Overall, the level of these risk factors among King County residents was more favorable than among residents of Washington or the United States as a whole. Below is an abbreviated version of a table presented in the Health of King County 2005 report, highlighting selected risk factors compared to the national objectives:

**Behavioral Risk Factor Prevalence (%) Among Adults in King County, Washington State, and the United States (Health of King County, 2005)**

	<b>King County</b>	<b>Washington State</b>	<b>United States</b>	<b>HP 2010 Objective</b>
<b>Current smoking 2004</b>	15.2	19.2	20.8	12.0
<b>Obesity 2004</b>	17.7	21.7	22.2*	15.0
<b>No physical activity 2004**</b>	14.5	17.2	22.8	20.0
<p>* The US rate is for 2002</p> <p>** King County and Washington state have already reached the US Healthy People 2010 objective for this indicator</p>				

The following important concerns persist:

- Deaths from unintentional injuries have not declined in the past decade.
- The mental health status of residents (including suicide) is not improving.
- Excessive alcohol use is higher in King County than the rest of the state and the nation and the pattern of drug-related deaths has changed.
- Improvements seen in access to timely prenatal care in the early and mid 1990s have ended.
- Poor indoor environmental quality, usually related to substandard or poorly ventilated buildings, is a concerning environmental health issue.
- The reported rates of Chlamydia and early syphilis (sexually transmitted infections) have increased in recent years.
- Because specific individual choices about risk factors may explain only 25 to 30% of the differences of mortality among comparison groups, further accomplishments in changing the prevalence of risk factors are likely to await addressing root causes of ill-health, such as those factors identified as “determinants of health”
  - Indeed, the Atlantic regional office of Health Canada notes the current tendency of chronic disease prevention strategies to

focus on changing individual risk behaviors despite evidence suggesting that efforts to address social and economic root causes could be more effective. Interventions to change individual behaviors are typically more successful among higher income groups, where people have a greater degree of options and control over their lives.

- Limitation in access to care generally (for the un- and under-insured), and to specific types of care, such as clinical preventive services, mental health care, substance abuse treatment and oral health care, limit the effectiveness of the health care system. Additionally there are serious concerns around quality of care and the capacity of the current health care system to effectively serve a diverse and aging population.
- Health issues related to the physical environment highlighted in the Health of King County report include asthma, air quality, West Nile virus, water quality and waterborne illness and the Tacoma smelter plume.
  - The childhood asthma hospitalization rate has seen the most dramatic reduction. But children living in high poverty areas are 3 times more likely to be hospitalized for asthma.
  - Most people spend as much as 90% of their time indoors where much less attention is focused on air quality as compared to that for outdoor air. Potential hazards in the indoor environment include mold, pesticides, chemicals, airborne particles, tobacco and fireplace smoke, lead dust and noise.
  - Appropriate surveillance for West Nile virus has revealed no evidence of the infection in King County.
  - Water quality influences how communities can use water for activities such as drinking, swimming or commercial purposes.
  - While environmental studies show widespread contamination for lead and arsenic related to the Tacoma smelter plume, thus far no immediate health emergency exists at the levels detected, but more testing needs to be done in areas where children play frequently.
  - Research done on the health of Puget Sound waters document that contaminated water and marine life have direct implications for human health through exposure which disproportionately affects specific populations.
  - Exposure to environmental pollutants and the physical/chemical environment within King County along with the built environment act in concert with other determinants of health which give rise to disparities in health status.

- Homelessness is an important issue in King County, recognized by both the Executive and the Council, and the County has undertaken a Ten Year Plan to End Homelessness. Homelessness as a condition has a major impact on health, yet the number of people losing their homes have been consistently getting higher in King County.
- The impact of globalization on the health of King County residents is not specifically highlighted in the *Health of King County* but warrants specific mention.
  - Because of King County's important role in the economy and culture of the Pacific Rim, there are few if any regions in the country where the health implications are more important. Worth highlighting are tuberculosis (TB), HIV/AIDS, pandemic influenza, and newly recognized infections such as SARS. For example, as many as 100,000 people have latent TB in King County and the majority contracted the condition in their country of origin. International outbreaks are only a plane flight away from the Pacific Northwest.

## **Health Disparities**

Most striking and challenging are the serious and persistent health disparities within King County:

- As described earlier, a health disparity is a difference in a health outcome or determinant of health across two populations, such that one population suffers a disproportionate burden of illness.
- Health disparities have persisted for years as a result of the complex interaction of the social determinants of health. It is telling that even when there have been improvements in the trends of some indicators of health, most disparities have tended to persist. This suggests either a systemic or an “upstream” cause for the disparity
- There are large and persistent disparities in health indicators and access to health care in King County across racial/ethnic groups, income groups and geographic areas of the county. While some disparities are diminishing, many are increasing. There are different patterns of disparities depending upon the groups being compared.

- Racial and Ethnic Disparities
  - When health indicators are compared between African Americans and American Indians/Alaska Natives on the one hand, and whites on the other, disparities are found across a very wide spectrum of health indicators, including death rates, birth outcomes, chronic disease rates and risk factors for chronic disease (e.g. smoking, overweight and physical inactivity, lack of screening), injuries, HIV, mental distress, alcohol use and drug-induced deaths, and access to medical care. Hispanic/Latinos are also affected by disparities, including high rates of adolescent births, physical inactivity, mental distress, HIV, and access to care. These observations strongly suggest that deeply entrenched systemic contributors, including those identified in the IOM report, are present in King County.
- Income Disparities
  - Low income residents also have disparities in health indicators relative to high income residents. Disparities occur in death rates, birth outcomes, adolescent births, all chronic diseases and risk factors (such as physical inactivity, overweight, smoking, and lack of screening), HIV, mental health, alcohol use, drug-related deaths, and access to care. While the *Health of King County* report documents disparities across racial/ethnic groups and geographic areas of the county, the largest disparities generally occur between the lowest and highest income groups. For example, new cases of HIV occur *thirteen* times more frequently and unmet health care needs *five* times more frequently among low income residents. Disparities associated with income affect not only residents of high poverty areas. Residents of medium poverty areas are also affected, although to a lesser degree. These observations highlight the central role of livable wages, tax policy and social structure as critical health strategies for the future of King County.
- Geographic Disparities
  - A decade ago, primarily Central and Southeast Seattle were disproportionately affected by poor health. Now, the regions of the county experiencing the poorest health have expanded south. The South Seattle/South County Area, which includes Downtown, Central and Southeast Seattle, Beacon Hill, Delridge, White Center/Boulevard Park, Tukwila/SeaTac, Kent and Auburn, experiences lower health status and more limited access to health care than other regions. This region has:

- The highest death rate and the lowest life expectancy in the county. While the death rate in this region is decreasing, the rate of decline is slower than in other parts of the county.
  - Poorer maternal and child health indicators than the rest of the county. Infant mortality is increasing only in the South Region and the rate of inadequate prenatal care (either not occurring or provided late in pregnancy) in the South Region is not declining as it is in other regions. The South Seattle/South Region Area also has the highest rates of low birth weight, very low birth weight, preterm delivery, adolescent birth and late or no prenatal care.
- Disparities also appear in other areas of the county. These areas also have clusters of poor health indicators, although none include such a wide range of conditions as found in the South Seattle/South Area.
  - Southeast County and to a lesser extent Federal Way are notable for relatively high rates of chronic illnesses and risk factors for chronic disease, such as deaths from cancer, heart disease and diabetes and risk factors including smoking, physical inactivity, obesity, hypertension and lack of health insurance.
  - Downtown Seattle is notable for its concentration of unintentional injuries, HIV and AIDS cases, mental health problems, drug and alcohol problems (including deaths from liver disease, drug-induced deaths, hospitalizations for illicit drug use and alcohol-induced deaths) and access to care issues.
- Disparities among sexual minorities
  - Rates of smoking, binge drinking and heavy drinking among homosexual and bisexual people are nearly twice as high as among heterosexuals.
  - Breast cancer screening by mammography is completed less commonly among lesbian and bisexual women compared to heterosexual women.
  - HIV and AIDS still predominantly affect gay males but, are slowly increasing in other groups.
  - Frequent mental distress is twice as common among sexual minorities as among heterosexuals.

## **Comparison to Peers**

Three different comparisons to peer counties and their health departments were considered for this report:

- First, the websites of seventeen selected major metropolitan health departments were examined to compare the number, scope, modernity and sophistication of health status reports produced and made accessible to the public. This broad-brush review supports the conclusion that PHSKC is a leader in the country with regard to its outstanding capacity and performance in producing cutting-edge reports. It is particularly noteworthy that the PHSKC-related reports cover much more than the traditional public health measurements and specific programmatic analysis, but also address the challenges of the safety net issues and the evolving and cutting-edge science of the social determinants of health. During phase II of the PHOMP, we will explore a comparison of innovative responses to these reports.
- We attempted to compare data presented in the PHSKC reports with that available from the five MMHDs (listed in Appendix II) which have been selected to undergo more in-depth review as a part of the PHOMP process. We concluded that the comparison of readily available data was problematic. There are a number of reasons for this: use of different indicators; varied currency of data; varied methods of adjustment of data; and different timelines for trend analysis. To use primary data sources from each county and reconstruct comparable indicators for epidemiologic analysis is beyond the scope of this report and would have little utility in the formulation of the broad policy framework desired for this phase of the PHOMP. Such an analysis may even be of questionable utility for future phases of this project, particularly if the desired outcomes include recommendations about best practices, funding options, policy strategies and implementation. The latter items can be informed by other methods of information collection.
  - We were able to document that the comparison counties face similar challenges in their communities and, in particular, they are seriously grappling with the urgency to eliminate health disparities (inequities), whether they are described by race/ethnicity, income status or geography. (See Appendix II for descriptive examples of health disparities in the comparison counties.) Later phases of the PHOMP will explore evidence of best practices as these counties seek to eliminate health disparities.

- Despite the limited value to policy development of the previously mentioned comparison, we do present a brief third comparison using the *Big Cities Health Inventory, 2003* which is the only available published report specifically focused on comparison health measurement at the population level in cities in the U.S. The report has many advantages: standardized datasets, collaborative development, periodic updates and a focus on improvement through comparisons. However, one major disadvantage of using this report is that the data is limited to the boundaries of the largest city within or closest to the county and therefore must be used with caution because our paper focuses on the whole of King County. Also, some of the information is relatively old, using data from the late 1990's and no later than 2000. Nonetheless, since health statistics of large metropolitan counties such as King County are greatly influenced by the health measurements of the largest core city, some use of this report is indicated.
  - Appendix III displays the rank of the five cities (Columbus, Miami, Nashville, New York, Oakland and Seattle) which are the major cities associated with the counties selected for comparison in the PHOMP. Depicted are the ranks these six cities had among the 47 cities in the report for each of 20 health indicators. For each indicator the rank which is the best (meaning favorable towards health) and second best among the six cities can be compared in the table. **Seattle fares the best in this comparison; in twelve out of 18 comparisons Seattle is either best or second best ranked of six cities.** The comparable numbers for the other cities is as follows: Columbus (5 of 17); Miami (2 of 15); Nashville (4 of 20); NYC (10 of 20); Oakland (4 of 18). The *Big Cities Health Inventory* indirectly confirms the assertion by the *Health of King County* which highlights progress in health status.
  - Data from the *Big Cities Health Inventory* depicted in Appendix IV also confirms the need to focus on health disparities in King County. We selected the four indicators for which sufficient data was available for each of the six cities to compare the rate ratio for non-Hispanic black and non-Hispanic white rates of the indicators. (It should be noted that these were the four indicators and the two categories of race/ethnicities recorded in the report which were available for all six cities). We also compare the rate ratios of the six cities to average rate ratio of all of the 47 cities described in the report. The higher the ratio the greater the disparity. **Seattle's ratio was the highest or nearly the highest in three of the four indicators suggesting that the health disparities in Seattle may be worse than the other comparable metropolitan areas.** By inference from data the *Health of King County* report, this observation may also apply to King County as compared to the other five counties.

## **Conclusions**

In this concluding section we provide a summary of our interpretation of the significance and meaning of the observations in this paper for a broad policy framework for decision making about public health in King County. First, the key observations:

- The current health environment is tremendously precarious. There is a remarkable concurrence of health related forces globally, nationally and locally. Four aspects of the local health environment contribute to a sense of crisis: persistent health inequities, growth of chronic diseases, re-emergence of old and new infectious disease threats and an extremely fragile safety net of care for the vulnerable populations.
- Global, national, state and local forces are playing out within King County's health environment, including:
  - globalization
  - accelerating technological advances
  - huge demographic changes
  - widening gaps between haves and have-nots
  - re-emergence of the importance of infectious diseases, epidemics and pandemics
  - increasing prevalence of chronic diseases
  - complex and persistent health disparities
  - profound impact of social, built, and physical environment
- A factor unique to the U.S. relative to other modern industrialized counties is the absence of universal access to basic medical care. This fact stresses King County, its residents and the safety net providers serving the uninsured.
- Development of the OMP presents an opportunity for King County and PHSKC to build on past success and face new challenges as a national leader in major metropolitan public health.

Important implications for next steps based on this description of the health environment include:

- **Rapid change demands innovation and flexibility.** Ongoing support for public health is needed to establish and maintain the basic infrastructure

as a foundation upon which innovation can flourish. Responses to new problems must be flexible and nimble. Innovation will be enhanced by progressive partnerships with universities, cutting-edge research institutions and communities.

- **State of the art technology should be a major tool for improvement.**  
Health related technologies (i.e. new HIV treatments, genomic-based screening and diagnostic tests, vaccines, etc,) and those which depend on advances in informatics and communications will need serious attention and investment in order to keep pace with the modern world. These investments should be based on evidence of best practice models.
- **Health disparities must be eliminated; BUT there is no “magic” solution.**  
Serious and persistent inequities in health status across race/ethnicity, gender, income groups, and geography are a reflection of broader inequities in the distribution of social resources. Unless underlying determinants of health are addressed, the health environment will continue to be defined by these patterns of inequity.

It is certain that substantial advances in the elimination of disparities will require a completely fresh look. Because health disparities are now entrenched, no single action can reverse the problem; accordingly, organizations and leaders should avoid the temptation to address the issue with short-term and superficial efforts. Any serious effort to address health inequities will necessarily require a multi-faceted, multi-sector, long-term commitment including but not limited to the following:

- Strengthening the political will to act
- Major policy initiatives which both government and the private sector must undertake to reverse the underlying social determinants of the health disparities
- Continued monitoring of health disparities using sound epidemiology grounded in science and social systems understanding, and comprehensive public health surveillance systems
  - Community health assessments need to expand to include information about:
    - Mental health issues and services
    - Additional analysis of the impact to vulnerable populations, especially those who do not speak English

- Systematic community level environmental health data
  - Health status about sexual minorities
- Innovative outreach and community empowerment techniques
  - Services focused both on whole communities experiencing unhealthy conditions and services for individuals in need
  - Advocacy for, convening and coordinating safety net providers of care
  - World class cultural competence not only in personal health services but also in health promotion, health protection and public health preparedness
  - Marketing and communication strategies which reverse the current denial of the problem and point toward a broader concept of health and its determinants.
  - Active exploration of organizing the next generation of health improvements around the social determinants of health with greater emphasis on health and well-being.
- **Recent past accomplishments should not be taken for granted.** Overall, King County can be proud of the general health of its residents. To maintain the gains of the past is critically important while improvements are made and the challenges described in this report are addressed. Care should be taken to avoid dismantling successful programs and services in the pursuit of new issues.

Experience has shown that the value of prevention and early intervention is sometimes, unfortunately, shown only after a program is stopped or weakened. Prevention techniques do not have the visibility they deserve when compared to new technologies. Yet it is important to balance promising technology advancements with the need for innovative lower tech public health interventions such as outreach, social support and community building. These interventions are often less costly and more effective because they involve and empower people to act within their communities.

- **New and old infectious disease threats have emerged or re-emerged.** Naturally occurring epidemics and threatened bioterrorism demand a renewed vigilance including:
  - incident management systems for a large scale health emergency
  - coordination of the health and emergency response
  - sophisticated disease surveillance
  - optimal availability of vaccines and antiviral agents

- robust healthcare system preparedness
- outbreak containment measures
- timely, accurate and effective public communication

Given that public health infrastructure has been largely under-funded for decades, significant events, such as natural disasters or acts of terrorism, pose a substantial threat to local public health agencies and the communities they serve.

- **The environment must be leveraged for human health.** Focus on the environment should emphasize all aspects of the environment and encompass the human health implications of the social, physical and built environment. Procedures for defining and making major policy decisions (even if the decisions are perceived initially to be unrelated directly to health) should incorporate proactive precautionary measures to avoid potential health risks, and formal health impact assessments which refine policy proposals so that they foster health.

Examples of issues and concerns include:

- Enhanced efforts and new approaches must address the factors that result in profound inequities in the risk of exposure to environmental pollutants for low-income, people of color, immigrant and non-English speaking communities.
  - Urban and suburban sprawl have contributed to overweight/obesity and decreasing air quality.
  - Intensive public education and messaging will help the public understand new concepts about the implications of the built environment for health
  - Multiple sources of environmental pollutants (including the residual from methamphetamine labs) exist throughout the county. Body burdens of toxics are rising in the population.
  - Poor indoor air quality, due to mold and other hazards, is a major cause of preventable chronic disease.
- **Capitalize on the synergy between personal healthcare and population health services.** Policies which promote inclusion of a population health perspective in health care delivery systems can reconnect the personal health care system and population health. Both systems need to address the disparities in quality of health care by race and income and contribute to the elimination of inequities in health status. Local coordination with and expansion of safety net providers should build on models which have worked in the past within King County and explore new ways of using current resources most efficiently while advocating collectively for new resources.

- The interaction and close coordination between the personal and population health arena is a sleeping giant for prevention within King County. For example, the efforts of the King County Health Action Plan with its Kids Get Care program and renewed effort to "Cover All Kids in King County"; the Puget Sound Health Alliance with its focus on this intersection for improving quality help drive down costs. The public/private Collaborative on Diabetes, Asthma, Children's Preventive Health are getting underway.
- **Advocacy for universal access to healthcare needs reinvigoration** There is a tipping point at which widespread deficiencies in personal health care become themselves major public health problems. Many believe that we are already past that tipping point. Adequate population health cannot be achieved without making comprehensive and affordable health care available to every person residing in the United States. Key roles of public health in this collaborative effort are providing support, information and coordination with the health care providers in the community.
  - National, state and local leaders in the private and public sectors alike need to re-examine their role in building a consensus about the value of access to primary care and critical referral services
  - Also important to public health is not only the growing number of uninsured but also new barriers on the horizon (i.e., citizenship verification needed for access to Medicaid services as of 7/01/06.) As insurance coverage no longer guarantees access to needed services, and as the numbers of uninsured (or insured but unable to access services) grows - the population effects of disease and lack of access to care becomes a public health problem.
- **The public health workforce of the future will require new and varied skills.** There is no more important element of the public health infrastructure than the expertise and skills of the workforce.
  - Reduction or elimination of health disparities calls for a diverse workforce which better reflects the population served by King County.
  - Aggressive and innovative recruiting and retention strategies of high quality public health professionals are needed to replace an aging public health workforce.
  - Shortages, both nationally and locally, of clinical service providers, environmental health workers, nurses, family practice physicians, and pharmacists exacerbate recruiting and retention problems.

- The demands of public health preparedness force the need to cross-train many in the workforce to new functional responsibilities.
- Increasing mental health problems among the population served calls for an expanded capacity to adequately serve this population.
- Rapid growth in the knowledge base for public health practice makes it very challenging for the department to keep up with literature and current guidelines
- The challenges facing a modern urban health department require a population of workers who can engage community residents using non-traditional methods and innovative approaches.

## **Appendix I**

### **One Model for the Determinants of Health**

A model adapted from the one developed by the Detroit Urban Research Center is reproduced on the following page. It may be useful to provide a summary of a way to think about this model in the context of a paper on the health environment.

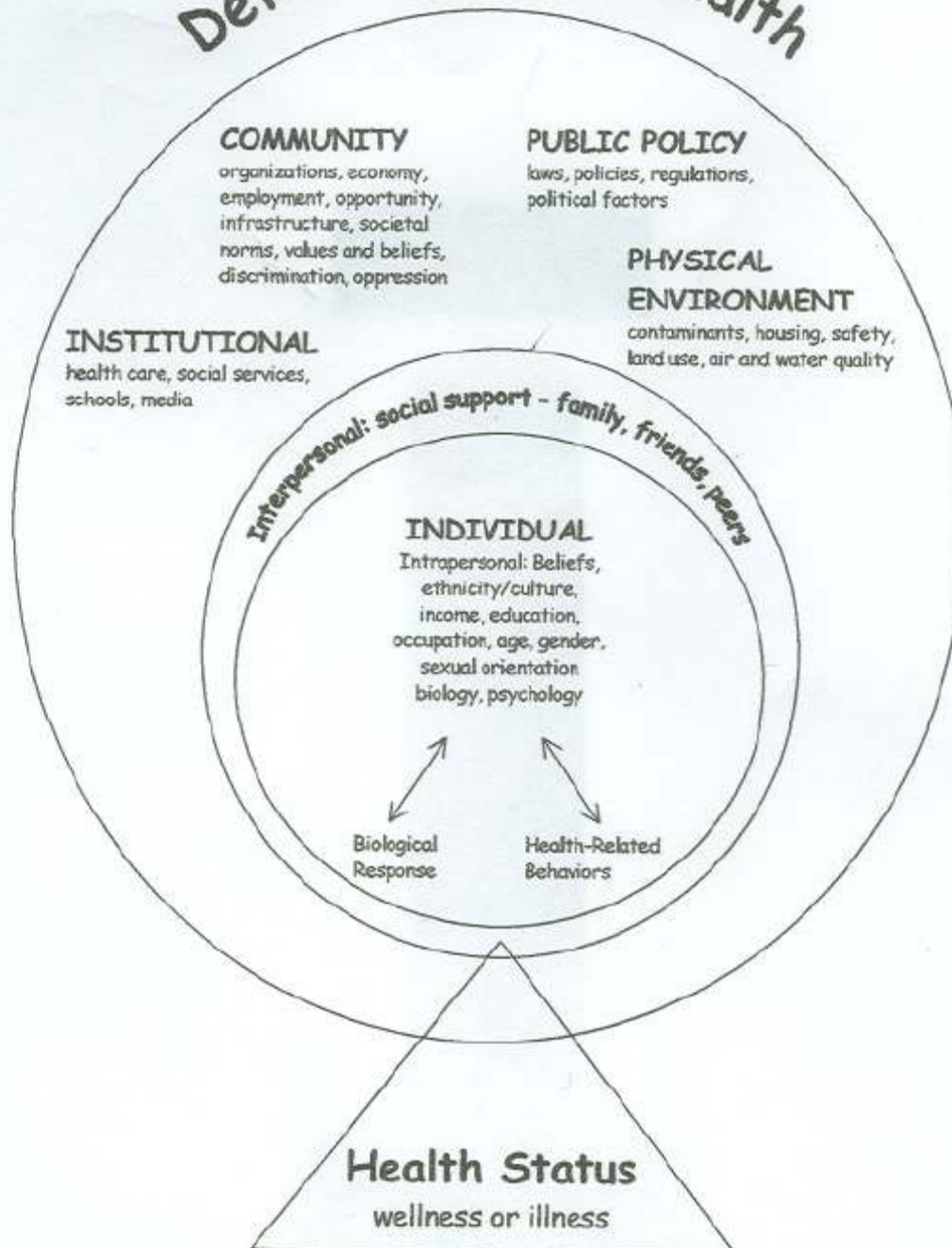
The triangle at the bottom of the figure can be seen as a fulcrum on top of which is balanced a system of inter-related determinants of health. If this system tips to the right illness is more likely to occur: tipping to the left fosters wellness (or health).

The circles depict factors influencing health within three categories of determinants: individual intrapersonal factors, interpersonal social support factors and overarching upstream factors. Individual health is influenced by an interaction between the interpersonal factors with the person's biologic response based in genetics and individual health-related behaviors. But these individual factors are operative within the context of an interpersonal network of social support which, in turn is greatly influenced by overarching factors within institutions, the community, the physical environment and by policy. Thinking of health in this way opens up many opportunities for improving health beyond simple paradigm of avoiding risk factors and illness.

Framing the determinants of health broadly should include the influences across the lifespan of genetic and biological processes, individual behaviors and lifestyle, and the social and physical environments in which people live. This sets the stage for the discussion on the environment and human health. For instance, access to personal health care services is thought to contribute 10% to a population's overall health, the social and physical environment 20%, genetic endowment 20% and health behaviors 50%. . How the balance moves toward wellness or illness is, therefore, not only determined by individual choice and biology but also by the social support for healthy choices and the upstream context of policy, community, environment and institutions which promote healthy choices.

Individuals and families are embedded within social, political, and economic systems that shape behaviors and constrain access to resources necessary to maintain health. Greater emphasis is needed on public health interventions that involve communities, with the goal of collectively identifying resources, needs and solutions.

# Determinants of Health



Adapted from a model by the Detroit  
Urban Research Center.

## **Appendix II**

### **Observations about Health Disparities: Comparison MMHD**

#### ***Alameda County (Excerpted from: Alameda County Health Status Report 2003)***

- The findings of this report demonstrate the persistence of large racial and ethnic health disparities in Alameda County.
- Inequities in income and education level exist in Alameda County. Poverty has changed little during the past decade.
- Examples of existing disparities:
  - African Americans clearly bear a larger burden of disease and death than other racial/ethnic groups for almost all the indicators examined.
  - Latinos and Native Hawaiian/Other Pacific Islanders had birth rates in 2000-2001 that were substantially higher than those among other race/ethnic groups.
  - The CHD (coronary heart disease) death rate was substantially higher among African Americans than among other racial/ethnic groups.
  - African Americans had a significantly higher cancer death rate than Asians, Latinos, or Whites.
  - African Americans were ten times more likely to die as a result of a homicide than all other racial and ethnic groups combined.

#### ***Columbus Health Department (Excerpted from: 2002 Franklin County Health Assessment)***

- Examples of existing disparities:
  - Access to healthcare remains particularly difficult for certain sub segments of the population, including low-income and African American residents.
    - Among uninsured adults in Franklin County, 40.3% report that they are uninsured because they cannot afford the insurance premiums.
    - More than one-third of adults living at or near poverty and 24.3% of Non-Hispanic African Americans lack prescription drug coverage.
    - Among low-income adults, nearly 50% had not visited a dentist in the previous year and over 40% were without dental insurance.
  - Overall, Franklin County rates are much higher than those reported both state and nationwide for primary/secondary syphilis,

gonorrhea, and Chlamydia. For each of these, African American rates dramatically exceed those reported among Whites and Asian/Pacific Islanders.

***Miami-Dade County Health Department (Excerpted from: Miami-Dade County CATCH Report)***

- Examples of existing disparities:
  - This [Far South Community] has the youngest population, the second highest percentage of black persons (26.7%), and the lowest per capita income (\$14,211). It also has the highest percentage of live births, and the highest age adjusted death rates from all causes. Its population is 48% Hispanic.
  - This [Northeast Community] has the highest percentage of blacks (48%) and lowest percentage of Hispanics (35%), and is home to the majority of Miami-Dade's Haitian population. It has the second lowest per capita income (\$16,861) and the highest percentage of Medicaid births. It had the most unfavorable rates for the Infectious Disease category.

***Metro Public Health Department of Nashville and Davidson County (Excerpted from: Health Nashville 2002, Davidson County Mortality Report, 2003)***

- On too many of the national benchmarks, Nashville comes out exceedingly below. On too many of the issues, the disparity gap has been evident for the past decade with no evidence of changing. (Health Nashville 2002)
- Examples of disparities (DCMR, 2003):
  - The infant mortality rate was 6.0 for Whites and 11.9 for Blacks.
  - Blacks experienced higher death rates for heart disease, cancer, stroke, diabetes, influenza and pneumonia, Alzheimer's disease, and nephritis. Whites had higher death rates for CLRD, accidents, and suicide.
  - The death rate for diabetes among blacks was 2.4 times that of Whites.
  - The death rate of nephritis was 2.6 times higher in the Black segment of the population than it was in the White population.

***Nassau County Health Department (Excerpted from: Nassau County Community Health Assessment 2005-2010)***

- There are substantial health disparities and inequities between racial and ethnic groups, and in different communities in Nassau County. Minority groups bear a disproportionate burden of illness and premature death.
- Likewise, a disproportionate burden of illness and premature death is concentrated in certain communities.

- Social and economic factors associated with poorer healthcare are more common in the selected communities and among racial/ethnic minorities.
- Examples of existing disparities:
  - The difference in the infant death rate is decreasing but is still substantial. In 1993 it was 4 times greater in non-Hispanic blacks compared to non-Hispanic whites and in 2002 it was 2 times greater.
  - The estimated prevalence of HIV in blacks is over 20 times greater than whites and 3.5 times greater in Hispanics than whites.
  - The average homicide mortality rate from 1999-2002 in blacks was nearly 9 times greater than for whites.

### Appendix III – City Rank by Indicator, Big Cities Health Inventory 2003\*

Health Indicator	Columbus	Miami	Nashville	New York City	Oakland	Seattle
AIDS Incidence	---	---	17	5	11	---
Syphilis Incidence	15	---	3	26	---	---
Chlamydia Incidence	18	---	24	22	19	29
Gonorrhea Incidence	16	---	12	24	18	27
Tuberculosis Incidence	---	---	19	7	6	22
Overall Mortality	19	4	28	43	34	38
Heart Disease Mortality	31	4	30	10	34	41
Cancer Mortality	17	5	28	45	32	33
Lung Cancer Mortality	13	23	12	44	35	25
Female Breast Cancer Mortality	16	5	37	36	19	31
Motor Vehicle Injury Mortality	40	1	3	47	37	38
Homicide	36	7	16	30	12	39
Suicide	42	4	14	46	40	15
HIV/AIDS Mortality	37	1	20	7	15	27
Fertility	42	1	38	37	28	44
Infant Mortality	15	39	13	30	35	45
Low Birthweight	14	20	17	27	38	46
Prenatal Care	17	13	7	37	1	25
Mothers Under Age 20	28	27	32	42	33	46
Mothers Who Smoke	3	39	18	33	---	23

\* Based on ranking of 47 cities; 1 corresponds to highest rate

**Appendix IV**  
**Ratio of Select Black to White Mortality Rates, by MMHD Major City**

	City Average	Columbus	Miami	Nashville	New York City	Oakland	Seattle
Overall Mortality	1.26	1.25	1.24	1.43	1.23	1.45	1.43
Heart Disease Mortality	1.21	1.21	1.07	1.39	.98	1.69	1.45
All Cancer Mortality	1.25	1.20	1.28	1.60	1.12	1.35	1.37
Lung Cancer Mortality	1.22	1.14	.93	1.29	.96	1.42	1.09

Big Cities Health Inventory 2003